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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/708,590	11/09/2000	Masato Muraki	35.G2732	2106

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EXAMINER

FERNANDEZ, KALIMAH

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 12/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/708,590

Applicant(s)

MURAKI ET AL.

Examiner

Kalimah Fernandez

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-14 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 15-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 18.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 5,834,783 issued to Muraki et al and US Pat 5,863,682 issued to Abe et al.

3. Muraki et al teaches a multi-beam apparatus (col.2, lines 17-33).

4. Muraki et al teaches a storage device (col.13, lines 48-58).

5. Muraki et al teaches calibration data for correcting variations in the irradiation dose among the plurality of the charged particle beams emitted from the plurality of element optical systems (col.12, lines 54-62).

6. Muraki et al does not a standard dose data and proximity effect correction data.

7. However, Abe et al teaches standard dose data (i.e. optimal exposure dose) (col.23, lines 24-27) and proximity effect correction data (col.20, lines 44-47).

8. It would have been obvious to an ordinary skilled artisan to incorporate the teachings of Abe et al into Muraki et al since Abe et al teaches the advantage of time-effectively correcting proximity effect (col.1, lines 11-16; col.2, lines 57-64).

9. Therefore, a controller adapted to control Muraki et al's apparatus based on proximity effect correction data and standard dose data would have been obvious at the time this invention was made.

10. As per claims 2-3, Abe et al teaches a bit map (col.16, lines 2-10; col.34, lines 11-18).

11. As per claim 4, Muraki et al teaches an obtaining means for obtaining calibration data (col.30, lines 21-48).

12. As per claim 5, Muraki et al teaches faraday cup (col.8, lines 63-64).

13. As per claim 6, Muraki et al teaches a selecting means (col.13, lines 48-58).

14. As per claims 15 and 18, both Muraki et al and Abe et al teach producing a wafer on which a pattern has been exposed (see col.1, lines 7-10 of Abe et al; col.1, lines 6-15 of Muraki et al).

15. As per claims 16 and 19, the obvious combination of Muraki et al and Abe et al teaches the recited controller since Muraki teaches the generation

of calibration data for correcting dose among multi-beams (col.12, lines 54-62) and Abe et al teaches proximity effect correction data (col.20, lines 44-47).

16. As per claim 17, Muraki et al teaches an aperture array (col.9, lines 24-46).

Allowable Subject Matter

17. Claims 7-14 are allowed. The following is an examiner's statement of reasons for allowance: the prior art fails to teach or obviously suggest the claimed invention.

18. Specifically, no teaching or obvious suggestion was found of the combination of method steps wherein a plurality of the proximity effect correction data depending on conditions of the object to be exposed; selecting any one piece of the proximity effect correction data; and performing correction with respect to the standard dose data based on the selected data as in claim 7.

19. Claims 8-14 are allowable by virtue of their dependance.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays,

should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 703-305-6310. The examiner can normally be reached on Mon-Thurs between 7:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on 703-308-4116. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

kf


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2000